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ECOLOGY LABORATORY (BIEB 121) SPRING 2016
York Hall Room 1310 T/Th 11:00 AM - 4:00 PM
TENTATIVE LAB SCHEDULE

<u>WEEK</u>		<u>FIELD/LAB WORK</u>
1	T March 29 Th March 31	Syllabus, safety, goals & outcomes, Insect ID & preservation Equipment sign out, Bioblitz (SCR, meet in lab)
2	T April 5 Th April 7	Stats review & JMP intro (York 3060/3070, meet in lab) Scientific Writing I: (BML workshop, meet in lab)
3	T April 12 Th April 14	Nutrient Net (meet at Elliott Chaparral Reserve) Nutrient Net Data analysis
4	T April 19 Th April 21	San Diego Biodiversity Project (SCR, meet in lab) Photo-microscopy, process specimens
5	T April 26 Th April 28	Scientific Writing II, data analysis Photo-microscopy, BOLD specimen page, beach lab prep
6	T May 3 Th May 5	Beach Ecology (SCR beach, meet in lab) ID beach samples & upload data
7	T May 10 Th May 12	Beach data analysis Careers Day
8	T May 17 Th May 19	Urban ecology samples (work on natural history project) Urban Ecology data analysis
9	T May 24 Th May 26	Student-led tour of UCSD natural history work on insect collection
10	T May 31 Th June 2	Biodiversity & phylogeny Insect Collection due 4 PM

COURSE DESCRIPTION

This is a course in experimental methods in field ecology. The focus will be on natural history, experimental methods, statistical analysis, and scientific communication (writing). Biometry is an essential prerequisite for this course. About one quarter of our class days will be spent in the field (outside) collecting data. Much of our work will be original research - generating information that is new to science.

ROOM ACCESS (York 1310)

Students can find the information on-line using the Account Lookup link at <http://acs.ucsd.edu>. Look for the list of rooms specific to the class and will find a password protected link for the door code. This link now provides an option to have the code e-mailed to a student's cell phone. The room is available for you to use outside of class, although it is used by other classes. Spring 2016 it will be occupied T/Th 5 PM-8 PM and W/F 10 AM-1 PM & 2 PM-5 PM.

ROOM SAFETY

Never, ever, ever prop open the door to York 1310 unless class is in session. ACMS will rescind all students' access codes if they see the door propped open. This is for security reasons - both your safety and the computer's. No food or drink is allowed in any of the York labs - not even coffee.

LAB BOOK

The lab book for this course is available at A.S. Soft Reserves (<http://softreserves.ucsd.edu/>), located in Student Center A, across from the Food Coop. Hours: M-TH 9 AM - 6 PM, Fri 9 AM - 5 PM, Saturday (week 1 - 2 only) 10 AM - 2 PM. Bring your lab book to every BIEB 121 class.

TESTS

There will be NO final exam in this course. The last meeting will be Thursday June 2, 2016.

PREPERATION

Read the "Required Reading" listed below before you come to class. We will have a quick class question session & discussion before each lab. The expectation is that you have thought about and can discuss the reading. We will use the free app "Poll Everywhere" to stimulate discussion.

GROUPS

You will be working in groups of 3 for the duration of the quarter. You will collect and analyze data and create graphs and tables as a group, but each individual must do their own writing for homework assignments and lab reports.

FIELD EXCURSIONS

On the first page of the syllabus, the field sites are in parentheses. Note that on April 12 we will meet at the Elliott Chaparral Reserve. Directions are in the lab. You are required to provide your own transportation. The other field trips will be a walk or bus ride from campus. *You will want a free UCSD Bus Zone sticker for your UCSD ID* (available from the campus parking office in the Gilman Parking Structure).

Except for highly unlikely circumstances, we will go on our field excursions rain or shine. Any exceptions will be posted on TED - please check if in doubt. If there is nothing posted, we will be going out.

During most of the field excursions you will be able to collect insects for your insect collection. It is a good idea to bring collecting equipment - nets, vials with and without EtOH, aspirator, and kill jar. You may also want to bring a pocket knife, hand lens, binoculars, and field guides if you have them.

FIELD EXCURSION CLOTHING

Suggestions: For the outdoor field work I suggest that you bring water and wear sunscreen and a hat. You may get muddy, dusty, sweaty, rained on, etc. on our field trips, so pick your clothes and shoes accordingly. Older and dumpier is better!

Requirements: I insist that you wear closed-toe and closed-heel shoes (no sandals, no clogs, no ballet flats). Sneakers are a great option. You will be counted as absent if you show up on a field trip in sandals. (One exception is the May 3 beach lab - you can wear any footwear you want.) There may be spiny cacti, ticks, biting ants, poison oak, and rattlesnakes at all of our field sites.

TRAVEL WAIVERS

Please fill out a travel waiver and an NRS waiver and return to me today.

PHOTO PERMISSION

Please fill out a photo permission form and return to me today.

LAB REPORTS

Labs are due at the beginning of class. I will deduct 5% per 24 hrs (or any part thereof) for late labs. The only exception is with a written documentation, such as a doctor's note. Please be sure to hand in your lab on the day it is due. I can not give full credit if you forget to turn in your lab.

Writing will be a large portion of your grade. Being a good writer is not a magical gift some people are given and others denied. Good writing takes practice and effort, just like learning to play the piano or hit a baseball. And scientific writing is a very specific genre with specific expectations, so practice can really make a difference. Labs will be graded both on specifics (did you address all the questions set for you?) and on the general qualities (did you convey the information in the clearest, most concise manner possible?). Because of this, there will often be more than one right way to do things. Your overall ability to communicate, through words, statistics, and graphics, will count for a lot. There is a campus-wide writing center (writingcenter.ucsd.edu) available for students who would like extra help with their writing.

PRINTING

You will need to have an account to print in the lab. You can set up an account at the ACMS web site (<http://sdacs.ucsd.edu/~icc/laser.php>).

ATTENDANCE

Be sure to sign in on the sign-in sheet. Attendance at every class meeting is required. If you miss a lab you need written documentation (doctor's note, etc.) as to the reason. Otherwise, you will lose 20 points per day for any absence. Also, you will miss 5 pts per lab for arriving late (one late arrival free), more if your late arrival holds up the rest of the class. We work as a group - it is not fair to those who arrive on time to have to wait for latecomers. Some of our field sites are behind locked gates - we have to wait for you if you are to participate. Some of the field excursions take the entire lab period, and students will have class immediately after this lab. The late policy will be in effect immediately.

If you miss a lab it is your responsibility to get data from your group. You will receive 50 points for active participation throughout the quarter - for being a contributing member of your group. I suspect that every one of you will easily earn all of these points, but you can lose points for being here physically but not mentally (i.e. shopping on your laptop while your colleagues are analyzing data).

The Biology Department requires that all students attend the 1st meeting of any lab course, otherwise you will be dropped from the course.

OUTSIDE OF CLASS

In addition to normal homework expectations, there are several activities that you will need to do outside of class. You will need to collect data for the Urban Ecology lab by setting out and picking up pitfall traps at sunset the evening of Tuesday May 17 and sunrise and sunset on Wednesday May 18. There are also two quarter-long projects. You will put together an insect collection. To be successful, you should plan on spending time exploring different habitats throughout the quarter, both in and outside of class. Your group will also be introducing the rest of the class to something interesting about the natural history of campus. Be observant as you wander around campus to find a good topic.

DROP POLICY / WAIT LIST

The Division of Biology's policies are detailed on this website:

<http://biology.ucsd.edu/undergrad/Waitlist.html>

The drop policy for lab courses is different than for lecture courses. Any student that drops after the end of the second lab meeting will have a "W" on their transcript. The Biology Department has an automated, first on, first off policy regarding the wait list. If you are on the wait list and hope to add, you should participate in ALL course activities, exactly as if you were enrolled.

SUPPLIES YOU PROVIDE

flash drive for saving & moving data, Soft Reserves lab book, field-appropriate (old) clothing, and several free apps for your phone: some way to record GPS coordinates (I believe all smart phones will do this - one device per group is sufficient), "Poll Everywhere", and a way to measure illuminance in lux units (such as "Lux Camera").

SAFETY

I take safety very seriously. I will have various rules regarding safety during our field trips. These safety rules must be obeyed. If I see anyone flagrantly breaking a safety rule I will give them a zero for attendance.

ACADEMIC INTEGRITY

Students are expected to do their own work, as outlined in the UCSD Policy on Academic Integrity (<http://students.ucsd.edu/academics/academic-integrity/policy.html>). Cheating will not be tolerated and all suspected cases will be handed over to the Academic Integrity Coordinator, which reports directly to the Dean of the student's college

THE END OF THE QUARTER

- a. Check in your equipment. Please don't forget your aspirator, insect nets, etc. in your car or at home. If anything is missing or broken, let us know so we can replace it for next year.
- b. Most equipment should go back in your cabinet
- c. Place all stuff that you have partially used up (insect labels, pins, clean vials, foam strips) on top of your lab bench - again so we can re-stock for next year.
- d. **Empty and uncap dirty vials and put in the sink. Take all tape off the vials!**
- e. Please do not leave any minuten pins in your protom boards - if they can not be re-used stick them to a piece of tape and place in the sharps waste container.
- f. Do not leave any extra containers - beakers, jars, vials - with dirt, organisms, unknown liquids on your lab bench. Dispose of chemicals properly. Throw away any unused insects.

I WILL DEDUCT PARTICIPATION POINT FOR FAILURE TO CLEAN UP.

REQUIRED READING

1	Th March 31	Insect Collection handout (lab book pp 17-30)
2	T April 5	Stats review & JMP intro (lab book pp. 81-92)
	Th April 7	Scientific Writing I (lab book pp. 67-71)
		Glenn and Holway, 2008 (TED)
3	T April 12	Primary Production Lab (lab book pp. 141-144)
	Th April 14	Borer et al. 2014 (TED)
4	T April 19	SDBP (lab book pp. 145-149) Science Daily 2014 (TED)
	Th April 21	SDBP: photomicroscopy (lab book pp. 153-156)
5	T April 26	Scientific Writing II (lab book pp. 71-79)
	Th April 28	SDBP: creating a specimen page (lab book, pp. 157-158)
6	T May 3	Beach Ecology (pp. 159-165). Sandy beach field guide (TED)
	Th May 5	no required reading
7	T May 10	Dugan et al. 2003 (TED)
	Th May 12	Job information for ecology students (lab book pp. 177-182)
8	T May 17	Urban Ecology Lab (lab book pp. 183-186)
	Th May 19	Davies et al. 2010 (TED)
9	T May 24	no required reading
	Th May 26	no required reading
10	T May 31	SDBP Phylogeny Worksheet (labbook pp. 187-192)
	Th June 2	no required reading

DUE DATES

<u>WEEK</u>	<u>DATE</u>	<u>DUE</u>	<u>POINTS</u>
1	Th March 31	Labeled insects (in class)	25
2	T April 5	Statistics worksheet (in class)	50
2	Th April 7	BML worksheet (2) (in class)	50
3	Th April 14	Nut Net data (in class)	50
4	Th April 21	Nut Net Results section	100
5	Th April 28	BOLD specimen page (in class)	50
6	T May 3	Biodiversity paper	200
7	Th May 12	Career worksheet	50
8	T May 17	Beach paper	200
9	T May 24	Natural history tour (group project)	50
9	Th May 26	Story Map (in class, <i>bring geo-ref photos</i>)	25
10	T May 31	Urban Ecology paper	200
10	T May 31	Phylogeny worksheet (in-class)	50
10	Th June 2, 4 PM	Insect collection	300
		Required reading	50
		Participation	50
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TOTAL			1500